

Case 2948

***Turrilites gravesianus* d'Orbigny, 1842 (currently *Hypoturrilites gravesianus*; Mollusca, Ammonoidea): proposed conservation of the specific name and designation of a replacement lectotype; *Turrilites tuberculatus* Bosc, 1801 (currently *Hypoturrilites tuberculatus*): proposed designation of a neotype**

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Abstract. The purpose of this application is to stabilise the current usage of the specific name of the widespread Upper Cretaceous ammonite species *Hypoturrilites gravesianus* (d'Orbigny, 1842). The lectotype designated by Kennedy (1971) is a composite specimen and a new lectotype is proposed. The holotype of the unused nominal species *Turrilites giganteus* de Haan, 1825 is conspecific with *H. gravesianus* and suppression of the name *T. giganteus* is proposed. Since Mantell (1822) the name *Turrilites* (now *Hypoturrilites*) *tuberculatus* Bosc, 1801 has been used for a species closely related to *H. gravesianus*, but the lost holotype of *T. tuberculatus* apparently belonged to another genus. A neotype which accords with the established usage of the name *Hypoturrilites tuberculatus* is designated.

Keywords. Nomenclature; taxonomy; Cephalopoda; Ammonoidea; Upper Cretaceous; ammonites; *Hypoturrilites*; *Hypoturrilites gravesianus*; *Hypoturrilites tuberculatus*.

1. Dubourdiou (1953, p. 44) established the genus *Hypoturrilites* for a group of Cenomanian (Upper Cretaceous) ammonites species and designated *Turrilites gravesianus* d'Orbigny, 1842 (p. 596) as type species. This species, and its close relative *T. tuberculatus* Bosc, 1801 (p. 18), are of almost worldwide distribution and have been frequently quoted in the literature of the last 150 years (see Wright & Kennedy, 1996, pp. 363–379).

2. Kennedy (1971, p. 21) designated as the lectotype of *T. gravesianus* 'd'Orbigny's figured specimen from Oise, France (Graves Collection)'. D'Orbigny (1842, p. 597) in the explanation of his pl. 144, fig. 3, said that this 'specimen' came from both the collection of Graves and of his own ('De la collection de M. Graves à Beauvais, et de la mienne'). This implies that the figure was composite, being restored from two or more fragments, a common practice in d'Orbigny's and contemporary works. The Graves collection has not been traced and neither of the two specimens listed in d'Orbigny's catalogue matches his figure. The surviving specimens of those listed in d'Orbigny's catalogue were illustrated by Wright & Kennedy (1996, text-figs. 140J,

K). D'Orbigny's figure of *Turrilites tuberculatus* on the same plate as that of *T. gravesianus* is demonstrably a composite based on two species, the specimens of which were discussed and refigured by Wright & Kennedy (1996, p. 369, text-figs. 144A-E). Kennedy & Cooper (1977) demonstrated that d'Orbigny's figures of *Ammonites prosperianus* (1841, p. 335, pl. 100, figs. 3, 4) were based on fragments of at least two different genera belonging to different suborders.

3. In view of the absence of specimens and the doubts about the nature of the original specimen or specimens of d'Orbigny's figure it is desirable to set aside Kennedy's designation of it (or them) as lectotype and to designate in its place one of the surviving paralectotypes. The two specimens in d'Orbigny's collection (no. 6140 in the d'Orbigny Collection, and from La Malle, Var, France, now housed in the Muséum National d'Histoire Naturelle, Paris) are very badly preserved (see Wright & Kennedy, 1996, text-figs. 140J, K), but d'Orbigny also cited in his synonymy of *Turrilites gravesianus* the figure by Mantell (1822, pl. 24, fig. 6) so making that specimen also a syntype. It is preserved in the Natural History Museum, London, as specimen no. BMNH C5762b, and was refigured by Wright & Kennedy, 1996, pl. 113, fig. 10. We propose that the Commission should designate this specimen as lectotype. As noted by Phillips (1977, p. 93) it was glued to a larger fragment, BMNH C5762a (refigured by Wright & Kennedy, 1996, pl. 113, fig. 13), and the resulting composite was figured by Mantell (1822, pl. 24, fig. 7) and refigured as *T. gravesianus* by Sharpe (1857, p. 25, fig. 1). It was also figured by Kennedy (1971, pl. 6, fig. 11) who pointed out that it was a chimaera, the upper whorls belonging to *Hypoturrilites gravesianus* and the lower whorls to *H. tuberculatus*.

4. The stability of the specific name of *Turrilites gravesianus* in its current usage is also threatened by the fact that de Haan (1825, p. 78) established a species *Turrilites giganteus* based on J. Sowerby's figure (1814, pl. 74) of *Turrilites tuberculatus* Bosc, 1801. The original of this figure, specimen no. BMNH C5761 in the Natural History Museum, London, from the Lower Chalk of Middleham, Sussex, U.K., is the holotype by monotypy of *T. giganteus* de Haan, 1825 but is identical with *T. gravesianus* d'Orbigny, 1842; the specimen was refigured by Wright & Kennedy (1996, pl. 109, fig. 5). To the best of our knowledge the name *T. giganteus* de Haan has never been used in the literature and is not even listed in Diener's *Fossilium Catalogus* (1925). In contrast, *T. gravesianus* is widely used; Wright & Kennedy (1996, p. 365) listed 38 citations between 1842 and 1991. To revive *Turrilites giganteus* for *T. gravesianus* would cause great confusion and we recommend that the Commission should suppress the former name.

5. The name *Turrilites tuberculatus* was introduced by Bosc (1801) thus: '2. *T. tuberculeuse*; t. *tuberculata*. D. Montfort, Journ. de phys. an 7, pl. 1, fig. 2. Tours de spire chargés de quatre rangs de tubercules disposés en quinconce; base sillonnée. Cette espèce se trouve, ainsi que la précédente, dans la Montagne de Sainte Catherine, près Rouen'. The specimen figured, but not named, by de Montfort was reproduced by Bosc, and is therefore the holotype. The figure, reproduced by Wright & Kennedy (1996, text-fig. 144F), appears to have been reconstructed, but the specimen is now lost. D'Orbigny (1842, p. 595) stated that it gave a false impression of the position of the tubercles and of the spiral angle, but other figures on de Montfort's plate are clearly accurate. The figure shows equal numbers of tubercles in all four rows, a feature of *Mariella* Nowak, 1915, and not a lesser number in the upper row,

characteristic of *Hypoturrilites* to which *T. tuberculatus* Bosc is now universally referred. D'Orbigny and subsequent authors have referred Sowerby's (1814, pl. 74) figure of BMNH C5761 to *T. tuberculatus*, but this is a specimen of *Hypoturrilites gravesianus* and also the holotype of *T. giganteus* de Haan. Thus the lost holotype of *T. tuberculatus* apparently belonged to a genus different from that to which the nominal species is now generally referred. Kennedy (1971, p. 21) outlined the diagnostic differences between *H. gravesianus* and *H. tuberculatus*. The earliest recognisable figure of a surviving specimen that was called *T. tuberculatus* and which accords with general current usage of the name is the three lower whorls of the composite (see para. 3 above) in Mantell (1822, pl. 24, fig. 7), i.e. specimen no. BMNH C5762a. Wright & Kennedy (1996, p. 367) listed 29 citations in conformity with current usage between 1822 and 1987. To avoid confusion and to maintain stability of nomenclature we hereby designate this specimen, reillustrated by Wright & Kennedy (1996, pl. 113, fig. 13), as the neotype of *Turrilites tuberculatus* Bosc, 1801.

6. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers:

(a) to suppress the name *giganteus* de Haan, 1825, as published in the binomen *Turrilites giganteus*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;

(b) to set aside all previous type fixations for the nominal species *Turrilites gravesianus* d'Orbigny, 1842 and to designate as lectotype specimen no. BMNH C5762b in the collections of the Natural History Museum, London;

(2) to place on the Official List of Generic Names in Zoology the name *Hypoturrilites* Dubourdieu, 1953 (gender: masculine), type species by original designation *Turrilites gravesianus* d'Orbigny, 1842;

(3) to place on the Official List of Specific Names in Zoology the following names:

(a) *gravesianus* d'Orbigny, 1842, as published in the binomen *Turrilites gravesianus* and as defined by the lectotype designated in (1)(b) above (specific name of the type species of *Hypoturrilites* Dubourdieu, 1953);

(b) *tuberculatus* Bosc, 1801, as published in the binomen *Turrilites tuberculatus* and as defined by the neotype designated in para. 5 above;

(4) to place on the Official Index of Rejected and Invalid Names in Zoology the name *giganteus* de Haan, 1825, as published in the binomen *Turrilites giganteus* and as suppressed in (1)(a) above.

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